	Application No.	Applicant(s)
Notice of Allowability	10/076,906	MEYER ET AL.
	Examiner	Art Unit	
	Dieu-Minh Le	2114	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *04/25/2005 and the interview on 10/27/2005.*

2. ☒ The allowed claim(s) is/are *4-13 now as 1-10.*

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some*   c) ☐ None of the:

       1. ☐ Certified copies of the priority documents have been received.

       2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

       3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

    * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.

    (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

       1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____ .

    (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of
    Paper No./Mail Date _____ .

    Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)

2. ☒ Notice of Draftperson's Patent Drawing Review (PTO-948)

3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____

4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application (PTO-152)

6. ☒ Interview Summary (PTO-413), Paper No./Mail Date _____ .

7. ☒ Examiner's Amendment/Comment

8. ☐ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____ .

1.   This office action is in response to the amendment filed

04/25/2005 and the interview on 10/27/2005.

2.   Claims 4-13 [now as 1-10] are allowable over the prior art

of record.

3.   An Examiner's Amendment to the record appears below.
Should the changes and/or additions be unacceptable to
applicant, an amendment may be filed as provided by 37 C.F.R.
§ 1.312.   To ensure consideration of such an amendment, it **MUST**
be submitted no later than the payment of the Issue Fee.

   EXAMINER'S AMENDMENT:

IN THE CLAIMS:

   Please replace all prior versions of claims in the application

with the current listing claims in the **ATTACHMENT**:

4.   Authorization for this Examiner's Amendment was given in a

telephone interview with Mr. Adam Furst Registration No. 51,710

on October 27, 2005.

   Any comments considered necessary by applicant must be

submitted no later than the payment of the Issue Fee and, to

avoid processing delays, should preferably **accompany** the Issue

Fee.   Such submissions should be clearly labeled "Comments on

Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dieu-Minh Le whose telephone number is (571) 272-3660. The examiner can normally be reached on Monday - Thursday from 8:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Scott Baderman can be reached on (571)272-3644. The Tech Center 2100 phone number is (571) 272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DIEU-MINH THAI LE
PRIMARY EXAMINER
ART UNIT 2114

Dml
10/27/05

ATTACHMENT:

1. – 3. (Canceled)

4.   (Currently Amended) A method for supporting failover between networked

storage systems, coupled between a first storage system and a second storage system

and a set of one or more storage systems, comprising:

   providing a single homogeneous environment distributed across ~~several~~ a

plurality of processors, cards, and storage systems;

   identifying member candidates using a standard protocol;

   creating Failover Sets, each Failover Set comprising one or more of said

member candidates;

   using a database to store and synchronize a configuration on all member

candidates in a Failover Set;

   for each Failover Set, designating one of ~~its~~ the member candidates as a

Primary, designating one of ~~its~~ the member candidates as a Secondary, and

designating remaining member candidates as Alternates;

   performing startup processing of the member candidates; and

   providing policies for run-time member behavior including fault

characterization and detection, health monitoring, compatibility requirements,

corrective action during failover, member restart and re-integration, and [the]

member failure limit exceeded condition.

5.   (Currently Amended) The method of claim ~~1~~ 4 wherein said storage systems

include a single chassis-based product.

6.   (Currently Amended) The method of claim ~~1~~ 4 wherein said storage systems

include a single stack-based product.

7.   (Currently Amended) The method of claim ~~1~~ 4 wherein said storage systems

include two or more chassis-based products.

8.   (Currently Amended) The method of claim ~~1~~ 4 wherein said storage systems

include two or more stack-based products.

9.   (Currently Amended) The method of claim [1] 4 wherein redundant network

links between said networked storage systems are employed by:

        a Discovery Service to identify said member candidates and verify

connectivity by confirming information exchanged in each network;

        an Arbitration Service to ensure that a member candidate's role is

Primary, a member candidate's role is Secondary, and remaining member

candidates' roles are Alternates, by supplying a member role in information

exchanged in each network;

        a Boot Service to coordinate said member role during startup using the

type of boot by exchanging said member role in each network; and

        a Policy Manager within a Failover Service to distinguish between a

communications link failure between member candidates and a real member

failure by sending a self-test using the redundant network to determine if said

member candidate is functioning according to [its] a specification.

10.   (Original) The method of claim 9 wherein said network links include different

network protocols.

11.   (Original) The method of claim 9 wherein user configuration and management

requests are load balanced across all of said member candidates.

12.   (Original) The method of claim 9 wherein multi-path programming for attached

host and storage devices is load balanced across all of said member candidates and

comprises:

        a port failover policy which is used to intelligently match server storage

requests to compatible storage devices comprising;

        an Active-Active policy where all paths to an exported virtual device can

transfer commands and data simultaneously; and

        an Active-Passive policy where only one path to said exported virtual

device can transfer commands and data at a time.

13.   (Original) A system for supporting failover between networked storage systems,

coupled between a first storage system and a second storage system and a set of one or

more storage systems, comprising:

        a Services Framework to provide a single homogeneous environment

distributed across [several] a plurality of processors, cards, and storage systems;

a set of configuration and management software called Services that

execute on top of the Services Framework comprising:

a Discovery Service to identify member candidates using a standard

protocol; and

a Failover Service to organize the members into various compositions call

Failover Sets, including Single, Hierarchical and N-way compositions;

a database management system to store and synchronize the

configuration on all members in the failover set;

an Arbitration Service to determines that one member's role is Primary,

one member's role is Secondary, and the remaining member's roles are

Alternates;

a Boot Service to coordinate the member role during startup using the

type of boot; and

a Policy Manager within the Failover Service to provide policies for run-

time member behavior including fault characterization and detection, health

monitoring, compatibility requirements, corrective action during failover,

member restart and re-integration, and the member failure limit exceeded

condition.